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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/012,459	12/12/2001	Yong Hyun An	K-0355	7276

34610 7590 07/14/2009
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EXAMINER	
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ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
07/14/2009	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YONG HYUN AN and YI SIK CHAE

Appeal 2009-002694
Application 10/012,459[1]
Technology Center 2600

Decided: July 14, 2009[2]

Before KENNETH W. HAIRSTON, MARC S. HOFF, and ELENI MANTIS-MERCADER, *Administrative Patent Judges.*

HOFF, *Administrative Patent Judge.*

DECISION ON APPEAL

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[1] The real party in interest is LG Electronics, Inc.

[2] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1, 2, 4-6, 9-15, 19-22, 35-37, 39-44, 46-48, and 50.[3] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellants' invention concerns a shopping center information service system and an operation method thereof that can provide, through a customer's mobile terminal, information on respective shops within a shopping center (Spec. 2). The shopping center service system includes a database service that receives and stores information from a variety of shops (Spec. 3). A data transmission server communicates with the customer's mobile terminal and automatically sends information to the mobile terminal upon customer entry into the shopping center (Spec. 3). An operation server controls both the database server and the data transmission server (Spec. 6). Sudden information data transmission devices couple to control the terminals in the shops and radio-transmit a second type of information to the customer's mobile terminal when the customer is within range of the sudden information data transmission device (Spec. 3-4). The customer may continuously send a pilot signal to the operation server to confirm the location of the customer in the building, wherein the confirmation serves as a pre-condition to transmitting the sudden information to the customer's mobile terminal (Spec. 13).

[3] Claims 3, 7, 8, 16-18, 23-34, 38, 45, and 49 have been canceled (App. Br. 2).

Claim 1 is exemplary:

1. An information service system, comprising:

a database server that receives and stores information on a plurality of different shops within a building;

a data transmission server at a prescribed location that communicates with a customer's mobile terminal and automatically radio-transmits a first type of information including the information on the shops to the customer's mobile terminal when the customer enters the building;

an operation server that controls the database server and the data transmission server; and

a sudden information data transmission device provided for the shops, wherein the sudden information data transmission device is coupled to control terminals in the shops, is installed within a predetermined area different from the prescribed location of the data transmission server, and radio-transmits a second type of information including sudden event information to the customer's mobile terminal when a sudden event is generated by one of the shops, the sudden event information transmitted while the customer is within a range of said sudden information data transmission device where reception by the mobile terminal is possible,

wherein the first type of information is transmitted at different times and through different wireless transmission links than the second type of information, and

wherein the operation server continuously receives information derived from reception by a mobile communication network of a pilot signal from the customer's mobile terminal to confirm a location of the customer within the building, said confirmation serving as a pre-condition to transmitting the sudden information to the customer's mobile terminal.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Johnson	US 6,456,234	Sept. 24, 2002
Shteyn	US 6,782,253	Aug. 24, 2004

Claims 1, 2, 4-6, 9-15, 19-22, 35-37, 39-44, 46-48, and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shteyn in view of Johnson.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Appeal Brief (filed December 21, 2007), Reply Brief (filed July 14, 2008) and the Examiner's Answer (mailed May 14, 2008) for their respective details.

ISSUES

Appellants argue that Shteyn does not teach or suggest the functions of the operation server of claim 1, which include "continuously receiving information derived from reception by a mobile communication network of a pilot signal from the customer's terminal to confirm a location of the customer within the building" (App. Br. 10; Reply Br. 4-5). Appellants contend that Shteyn does not teach an operation server that controls the database server and the data transmission server, as recited in claim 1 (App. Br. 10).

The Examiner finds that the combination of Shteyn and Johnson teaches an operation server that continuously receives information derived from reception by a mobile communication network of a pilot signal from the mobile phone to confirm a location of the customer within the building

(Ans. 5-6). The Examiner finds that the server 420 controls the database server and the data transmission server (Ans. 4, 15).

Thus, the two issues in the appeal before us are:

1. Did Appellants show that the Examiner erred in finding that the combination of Shteyn and Johnson teaches an operation server that continuously receives information derived from reception by a mobile communication network of a pilot signal from the customer's mobile terminal to confirm a location of the customer within the building, wherein the confirmation serves as a pre-condition to transmitting the sudden information to the customer's mobile terminal?

2. Did Appellants show that the Examiner erred in finding that the combination of Shteyn and Johnson teaches an operation server that controls a database server and a data transmission server?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, the invention concerns a shopping center information service system and an operation method thereof that can provide, through a customer's mobile terminal, information on respective shops within a shopping center (Spec. 2). The shopping center service system includes a database service that receives and stores information from a variety of shops (Spec. 3).

2. A data transmission server communicates with the customer's mobile terminal and automatically sends information to the mobile terminal

upon customer entry into the shopping center (Spec. 3). An operation server controls both the database server and the data transmission server (Spec. 6).

3. Sudden information data transmission devices couple to control the terminals in the shops and radio-transmit a second type of information to the customer's mobile terminal when the customer is within range of the sudden information data transmission device (Spec. 3-4). The customer may continuously send a pilot signal to the operation server to confirm the location of the customer in the building, wherein the confirmation serves as a pre-condition to transmitting the sudden information to the customer's mobile terminal (Spec. 13).

Shteyn

4. Shteyn teaches a mobile information service offering system 400 that enables the user of a mobile communication device to receive a short-range wireless facilitation signal from beacons 402-408. The beacons are controlled by a beacon infrastructure server 410. Terminals 412-418 are connected to server 410, enabling service providers to author or edit allocated service slots in the facilitation signals transmitted by beacons 402-408. Application server 420 couples to server 410 to assist in carrying out the matching process, which matches the user profile with the appropriateness of a service class before the service activation with a selected quality of service, wherein the service connection can be made over GSM cellnet, SMS, Bluetooth or even over a RF/IR link. (Fig. 4; col. 3, ll. 1-16 and 36-51; col. 8, ll. 12-41; col. 8, ll. 59-65.)

5. Shteyn teaches that the user can set a variety of different activity modes which may include shopping, contacting, chatting, messaging with friends, special interests such as sports, communal activities, etc. The

user may establish multiple user profiles that can be selected depending upon the context or environment; e.g., in the shopping mode, the user can specify that in his/her profile, particular interests in books, CDs, DVDs, travel arrangements, tools, etc. The user may select a context filter from the set of activity modes. In the alternative, the user may allow the environment to automatically trigger the selection of one of the user's filters as the user walks into a place (col. 3, ll. 52-64; col. 4, ll. 18-23).

6. Shteyn teaches that upon entering a shopping mall, the user may cause a guide, containing beacon-associated services for a variety of cafes, shops, amusements, and utility services, to be downloaded (col. 7, ll. 38-45).

7. Shteyn teaches a prior art system, the Impulse system, wherein a user's mobile devices that have a wireless internet connection and GPS receiver, enable user-initiated downloads from the system based upon user agents that the user defines. The user agent represents the user's interest and interacts with provider agents that represent providers such as businesses, services, attractions, and events, in an effort to download information when the mobile device is near the provider. Shteyn intended to make the system more user-friendly by eliminating the mandatory user-initiation of many activities while making data accessible automatically (col. 1, ll. 35-62; col. 2, ll. 48-55 and 64-67).

Johnson

8. Johnson teaches a system for proactive content delivery by situation location that provides transmission of situational location dependent information from a server data processing system (SDPS) to a receiving data processing system (RDPS), wherein the SDPS communicates

with the RDPS by pushing content when appropriate, rather than in response to a user query (Figs. 2, 3A, 3B, 5A; col. 2, ll. 10-37).

9. Johnson teaches that processing of the location of the RDPS and delivery of information is continuous for every RDPS in the wireless network 7 days a week, 24 hours a day (Fig. 3B; col. 10, ll. 17-19).

10. Johnson teaches a candidate delivery event (CADE) that is generated when there is a change in direction of the RDPS in step 324. The system in step 326 calculates the distance that the RDPS has moved since the previous location. This location is compared with the previous location (Fig. 3B; col. 9, l. 60 - col. 10, l. 7).

11. Johnson teaches an indoor wireless embodiment of the system wherein an RDPS device is placed on a shopping cart 506, wherein triangulation techniques are used to locate the shopping cart 506. The shopper with a cart receives content at the RDPS as the cart is navigated throughout the store. Special deals, sales or other promotional content are pushed automatically by the system to the RDPS (col. 11, l. 49 – col. 12, l. 11).

12. Johnson teaches transmitting information matching the requirements of a user-definable profile and matching the user's current location (col. 36, ll. 21-28).

13. Johnson teaches that the RDPS (mobile devices) either provides a heartbeat for the base stations or the base stations provide heartbeats for a response from the RDPS on either a reverse channel or a forward channel, respectively (col. 9, ll. 26-28).

14. Johnson teaches a user event management interface that provides an interface to event processing relevant to the system, which is

directly caused by a user, e.g., when the user uses the RDPS user interface (col. 17, ll. 11-24).

Tricarico

15. Tricarico teaches a system for locating a portable electronic device that includes a transceiver 104 that can transmit a continuous tone that enables location of the device using triangulation techniques and Base Transceiver Stations (BTSs) (¶ [0031]).

PRINCIPLES OF LAW

By a showing of insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness, the Appellants can overcome a § 103 rejection. *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998).

> Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'

KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 405 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966); *see also KSR*, 550 U.S. at 407 ("While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.").

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," *id.* at 415, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that "the principles laid down in *Graham* reaffirmed the 'functional approach' of *Hotchkiss*, 11 How. 248." *KSR,* 550 U.S. at 415 (citing *Graham*, 383 U.S. at 12), and reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The Court explained:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 417. The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.*

ANALYSIS

Claims 1, 2, 4-6, 9-15, 19-22, 35-37, 39-44, 46, and 50

We select claim 1 as representative of this group of claims, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Claim 1 requires an operation server that "continuously receives information derived from reception by a mobile communication network of a pilot signal from the customer's mobile terminal to confirm a location of the customer within the building, said confirmation serving as a pre-condition to transmitting the sudden information to the customer's mobile terminal."

Appellants argue that Shteyn does not teach or suggest the functions of the operation server of claim 1, which include "continuously receiving information derived from reception by a mobile communication network of a pilot signal from the customer's terminal to confirm a location of the customer within the building" (App. Br. 9-10; Reply Br. 4-5 and 7). Further, Appellants argue that Shteyn does not teach that receipt of the pilot signal by the operation server serves as "a pre-condition to transmitting the sudden information to the customer's terminal" (App. Br. 10; Reply Br. 4-5 and 7). Appellants contend that Shteyn does not teach an operation server that controls the database server and the data transmission server, as recited in claim 1 (App. Br. 10). Moreover, Appellants contend that the triangulation method of Johnson does not take into consideration a pilot signal received by a mobile communication network as a basis for confirming the location of a customer terminal (App. Br. 11; Reply Br. 5).

Appellants argue further that the method of triangulation needs three beacons to find the mobile terminal, as opposed to the one server of the claimed invention receiving a pilot signal from the mobile terminal (App. Br. 11; Reply Br. 5-7). In addition, Appellants argue that Tricarico does not teach continuously receiving a pilot signal from the customer's terminal to confirm a location of the customer within the building (App. Br. 12).

Finally, Appellants point to the Examiner's finding of the ability to receive a signal from a mobile terminal continually and argues further that the Examiner has not supported an "obvious" finding with a recitation of a disclosure in any reference or by any other objective basis (App. Br. 12).

The Examiner finds that the combination of Shteyn and Johnson teaches an operation server, wherein the "operation server continuously receives information derived from reception by a mobile communication network of a pilot signal from the mobile phone to confirm a location of the customer within the building, said confirmation serving as a pre-condition to transmitting the sudden information to the customer's mobile terminal" (Ans. 5-6, 14). The Examiner finds that this limitation is as simple as monitoring a fluctuating value to fall within a given range, wherein the value corresponds to the mobile terminal located within a specific building, and performs a specific function, e.g., transmitting information matching the requirements of a user-definable profile and matching the user's current location (Ans. 14; FF 8, 10, and 11). Further, the Examiner finds that Johnson teaches a continuous monitoring of all mobile devices with the network, wherein the mobile devices or RDPS provides a "heartbeat [signal] for the base stations" or the base stations provide a heartbeat signal for the RDPS (Ans. 14; FF 13).

We agree with the Examiner's findings that the combination of Shteyn and Johnson teaches an operation server that "continuously receives information derived from reception by a mobile communication network of a pilot signal from the mobile phone to confirm a location of the customer within the building, said confirmation serving as a pre-condition to

transmitting the sudden information to the customer's mobile terminal" (Ans. 5-6, 14).

In addition, the Examiner finds that server 420 controls the database server and the data transmission server, wherein the operation server 420 determines the appropriate communication information to transmit to the mobile devices, when to transmit this information and the most appropriate communication protocol to use for the transmission (Ans. 4 and 15; FF 4).

We agree with the Examiner's finding that the server 420 controls the database server and the data transmission server (Ans. 4, 15).

The Examiner finds that Tricarico is an example that triangulation and continuous tone transmission from a mobile device to the surrounding base stations for location determination are both well known in the art (Ans. 16). The Examiner finds that Appellants' argument with respect to Tricarico is not persuasive, in that Appellants make no attempt to explain how the pilot signal of the invention differs from that disclosed in Johnson and Tricarico (Ans. 16). The Examiner finds that Appellants' interpretation of triangulation is limited (Ans. 16). Under the method of triangulation, Appellants perceive that three beacons must be used to locate the mobile terminal; yet, triangulation encompasses the action of a mobile terminal sending a pilot signal or a continuous signal to at least one beacon (Ans. 16).

The Examiner finds that Johnson "obviously" (i.e., inherently) provides the ability to receive a signal from a mobile terminal continuously (Ans. 17). Since the base station can receive a signal from the phone at any time, the Examiner concludes that the base station must be able to receive at all times, connoting "continuously" receiving a pilot signal, as claim 1

requires (Ans. 17; FF 9). Further, the Examiner finds that Tricarico teaches receiving a continuous tone at the base station (Ans. 17; FF 15).

We agree with the Examiner's finding concerning Tricarico (Ans. 16). We agree that Appellants make no attempt to explain how the pilot signal of the invention differs from that disclosed in Johnson and Tricarico (Ans. 16).

In summary, we agree with the Examiner's finding that the combined teachings of Shteyn and Johnson teach all of the claim limitations of claim 1 (Ans. 5-6). We do not find Appellants' argument persuasive, particularly since Appellants make no attempt to explain how the pilot signal of the invention differs from that disclosed in Johnson and Tricarico.

We therefore find no error in the Examiner's rejection of claim 1 under 35 U.S.C. § 103, nor that of claims 2, 4-6, 9-15, 19-22, 35-37, 39-44, 46 and 50 not separately argued with particularity.

Claims 47 and 48

Appellants argue that Shteyn does not teach that the data transmission server "automatically radio-transmits the first type of information in response to a customer request for the first type of information," as claim 47 requires (App. Br. 13; Reply Br. 8). Appellants argue that beacons are passive devices where the data is transmitted constantly or per customer profile and not in response to a customer's request (App. Br. 13; Reply Br. 8). Further, Appellants contend that Johnson does not teach nor suggest these features (App. Br. 13; Reply Br. 8). However, Appellants admit that Johnson discloses transmitting information to a user in response to a user request (App. Br. 13; Reply Br. 8; FF 14).

The Examiner finds that Shteyn teaches the ability for the user to consciously select a context filter that includes "the first type of

information" a user wishes to receive (Ans. 17-18; FF 6 and 14). The Examiner acknowledges Appellants' admission that Johnson teaches "transmitting information to a user in response to a user request" (App. Br. 13).

We are not persuaded by Appellants' argument that the combination of Shteyn and Johnson does not teach each and every claim limitation of claim 47. We agree with the Examiner's finding that the combination of Shteyn and Johnson teaches a "data transmission server [that] automatically radio-transmits the first type of information in response to a customer request for the first type of information" (Ans. 17-18).

We therefore find no error in the Examiner's rejection of claim 47 under 35 U.S.C. § 103, nor that of claim 48 not separately argued with particularity.

CONCLUSIONS OF LAW

Appellants have not shown that the Examiner erred in finding that the combination of Shteyn and Johnson teaches an operation server that continuously receives information derived from reception by a mobile communication network of a pilot signal from the customer's mobile terminal to confirm a location of the customer within the building, wherein the confirmation serves as a pre-condition to transmitting the sudden information to the customer's mobile terminal.

Appellants have not shown that the Examiner erred in finding that the combination of Shteyn and Johnson teaches an operation server that controls a database server and a data transmission server.

ORDER

The Examiner's rejection of claims 1, 2, 4-6, 9-15, 19-22, 35-37, 39-44, 46-48, and 50 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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